### Connecting via Winsock to STN

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LOGINID: SSSPTA1623PAZ

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

```
Web Page URLs for STN Seminar Schedule - N. America
NEWS
NEWS
                "Ask CAS" for self-help around the clock
     2
NEWS
        FEB 25
                CA/CAPLUS - Russian Agency for Patents and Trademarks
                 (ROSPATENT) added to list of core patent offices covered
NEWS 4
        FEB 28
                PATDPAFULL - New display fields provide for legal status
                data from INPADOC
NEWS 5 FEB 28 BABS - Current-awareness alerts (SDIs) available
NEWS 6 FEB 28 MEDLINE/LMEDLINE reloaded
NEWS 7 MAR 02 GBFULL: New full-text patent database on STN
NEWS 8 MAR 03 REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS 9 MAR 03 MEDLINE file segment of TOXCENTER reloaded
NEWS 10 MAR 22 KOREAPAT now updated monthly; patent information enhanced
NEWS 11 MAR 22 Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS 12 MAR 22
                PATDPASPC - New patent database available
NEWS 13 MAR 22 REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS 14 APR 04 EPFULL enhanced with additional patent information and new
                fields
NEWS 15 APR 04 EMBASE - Database reloaded and enhanced
NEWS 16 APR 18 New CAS Information Use Policies available online
NEWS 17 APR 25
                Patent searching, including current-awareness alerts (SDIs),
                based on application date in CA/CAplus and USPATFULL/USPAT2
                may be affected by a change in filing date for U.S.
                applications.
```

NEWS 18 APR 28 Improved searching of U.S. Patent Classifications for U.S. patent records in CA/CAplus

NEWS EXPRESS JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005

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NEWS WWW CAS World Wide Web Site (general information)

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=> file reg
COST IN U.S. DOLLARS

FULL ESTIMATED COST

SINCE FILE TOTAL ENTRY SESSION 0.21 0.21

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STRUCTURE FILE UPDATES: 4 MAY 2005 HIGHEST RN 849790-35-8 DICTIONARY FILE UPDATES: 4 MAY 2005 HIGHEST RN 849790-35-8

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TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at: http://www.cas.org/ONLINE/DBSS/registryss.html

```
=> e methyl formate/cn
E1
                  METHYL FLUOSULFONATE/CN
             1
E2
             1
                  METHYL FLURBIPROFEN/CN
E3
             1 --> METHYL FORMATE/CN
                  METHYL FORMATE CATION RADICAL/CN
E4
            1
                  METHYL FORMATE COMPD. WITH THIONYL CHLORIDE (1:1)/CN
E5
             1
                  METHYL FORMATE CONJUGATE MONOACID/CN
F.6
            1
                  METHYL FORMATE HYDRATE/CN
E7
            1
            1
                  METHYL FORMATE RADICAL CATION/CN
E8
                  METHYL FORMATE SYNTHASE/CN
E9
           1
           1
                  METHYL FORMATE-BORON TRICHLORIDE COMPLEX (1:1)/CN
E10
           1
                  METHYL FORMATE-CARBONYL-180/CN
E11
                  METHYL FORMATE-D4/CN
E12
            1
=> e3
            1 "METHYL FORMATE"/CN
Ll
=> d l 1
L1
    ANSWER 1 OF 1 REGISTRY COPYRIGHT 2005 ACS on STN
     107-31-3 REGISTRY
RN
     Entered STN: 16 Nov 1984
ED
    Formic acid, methyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)
CN
OTHER NAMES:
    Methanoic acid methyl ester
CN
CN
    Methyl formate
```

Methyl methanoate CN CN R 611 3D CONCORD FS MF C2 H4 O2 CI COM AGRICOLA, ANABSTR, BEILSTEIN\*, BIOBUSINESS, BIOSIS, LC STN Files: BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DETHERM\*, DIPPR\*, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN\*, HODOC\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK\*, MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM\*, PIRA, PROMT, PS, RTECS\*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB (\*File contains numerically searchable property data) Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\* (\*\*Enter CHEMLIST File for up-to-date regulatory information)

O== CH- O- CH3

#### \*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

4174 REFERENCES IN FILE CA (1907 TO DATE)
15 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4177 REFERENCES IN FILE CAPLUS (1907 TO DATE)
133 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> file caplus
COST IN U.S. DOLLARS

SINCE FILE TOTAL ENTRY SESSION 6.87 7.08

FULL ESTIMATED COST

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FILE COVERS 1907 - 6 May 2005 VOL 142 ISS 19 FILE LAST UPDATED: 4 May 2005 (20050504/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> l1/prep 4179 L1 3299000 PREP/RL L2 833 L1/PREP (L1 (L) PREP/RL)

=> carbon monoxide

```
1117063 CARBON
         24819 CARBONS
       1126102 CARBON
                 (CARBON OR CARBONS)
        166121 MONOXIDE
           973 MONOXIDES
        166636 MONOXIDE
                 (MONOXIDE OR MONOXIDES)
L3
        140565 CARBON MONOXIDE
                 (CARBON (W) MONOXIDE)
=> methoxide
         11064 METHOXIDE
           393 METHOXIDES
L4
         11230 METHOXIDE
                 (METHOXIDE OR METHOXIDES)
=> 12 and 13
          248 L2 AND L3
=> 12 and 15
           248 L2 AND L5
L6
=> superficial velocity
         22021 SUPERFICIAL
             4 SUPERFICIALS
         22022 SUPERFICIAL
                 (SUPERFICIAL OR SUPERFICIALS)
        338194 VELOCITY
         65747 VELOCITIES
        371079 VELOCITY
                 (VELOCITY OR VELOCITIES)
          1657 SUPERFICIAL VELOCITY
1.7
                 (SUPERFICIAL (W) VELOCITY)
=> 16 and 17
             0 L6 AND L7
L8
=> mthanol
             0 MTHANOL
             0 MTHANOL
1.9
=> methanol
        178324 METHANOL
          673 METHANOLS
        178677 METHANOL
L10
                 (METHANOL OR METHANOLS)
=> 15 and 110
L11
           207 L5 AND L10
=> d l11 197-207 ti
L11 ANSWER 197 OF 207 CAPLUS COPYRIGHT 2005 ACS on STN
     Synthesis of methanol and derived compounds by homogeneous
TΙ
     Fischer-Tropsch-type reactions
L11 ANSWER 198 OF 207 CAPLUS COPYRIGHT 2005 ACS on STN
     Electrochemical synthesis of N-alkylformamides
TΙ
L11 ANSWER 199 OF 207 CAPLUS COPYRIGHT 2005 ACS on STN
     Homogeneous catalysis of carbon monoxide hydrogenation
ΤI
L11 ANSWER 200 OF 207 CAPLUS COPYRIGHT 2005 ACS on STN
```

Homogeneous carbon monoxide hydrogenation to

TI

## methanol catalyzed by soluble ruthenium complexes

- L11 ANSWER 201 OF 207 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Oxalic acid esters
- L11 ANSWER 202 OF 207 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Catalyst for the preparation of alkyl ester of formic acid
- L11 ANSWER 203 OF 207 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Methyl formate
- L11 ANSWER 204 OF 207 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Methyl formate
- L11 ANSWER 205 OF 207 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Synthesis of methanol at low pressures
- L11 ANSWER 206 OF 207 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Catalytic manufacture of methyl formate
- L11 ANSWER 207 OF 207 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Synthesis of methyl formate from methanol and carbon monoxide at high pressure using alkali activated charcoal as catalyst
- => potassium methoxide

558083 POTASSIUM

15 POTASSIUMS

558085 POTASSIUM

(POTASSIUM OR POTASSIUMS)

11064 METHOXIDE

393 METHOXIDES

11230 METHOXIDE

(METHOXIDE OR METHOXIDES)

L12 619 POTASSIUM METHOXIDE

(POTASSIUM (W) METHOXIDE)

=> 111 and 112

L13 17 L11 AND L12

=> d l13 1-17 ti

- L13 ANSWER 1 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Low-temperature **methanol** synthesis in catalytic systems composed of copper-based oxides and alkali alkoxides in liquid media: effects of reaction variables on catalytic performance
- L13 ANSWER 2 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI One-step synthesis of **methanol** from CO/H2 at low temperature over ultrafine CuB catalysts
- L13 ANSWER 3 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI In situ FTIR study on reaction pathways in Ni(CO)4/CH3OK catalytic system for low-temperature methanol synthesis in a liquid medium
- L13 ANSWER 4 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Methyl formate, its continuous production and device therefor
- L13 ANSWER 5 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Study on activity of alkali methoxide catalysts for carbonylation of methanol
- L13 ANSWER 6 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Selective formation of methanol over nickel carbonyl with

### potassium methoxide

- L13 ANSWER 7 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Hydrogenation catalysts for manufacture of methanol, their preparation method, and manufacture of methanol
- L13 ANSWER 8 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Studies on a new catalytic system for heterogeneous carbonylation of methanol to methyl formate
- L13 ANSWER 9 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Preparation of methyl formate by carbonylation of methanol with decreased catalyst losses
- L13 ANSWER 10 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Slurry phase synthesis of methanol with a potassium methoxide/copper chromite catalytic system
- L13 ANSWER 11 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI A novel synthesis of methanol
- L13 ANSWER 12 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Process for combined production of methanol/methyl formate and power
- L13 ANSWER 13 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Kinetic parameters in the carbonylation step of the low temperature synthesis of methanol
- L13 ANSWER 14 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Selective homogeneous production of alkyl formate from carbon monoxide and alcohol using metal carbonyl/alkoxide catalyst systems
- L13 ANSWER 15 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Homogeneous catalysis of methyl formate production from carbon monoxide and methanol in the presence of metal carbonyl catalysts
- L13 ANSWER 16 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI A convenient route to carbon-13-enriched triruthenium dodecacarbonyl. Chemistry relevant to methyl formate production from carbon monoxide and methanol
- L13 ANSWER 17 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Methyl formate
- => d 113 14-17 ti fbib abs
- L13 ANSWER 14 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Selective homogeneous production of alkyl formate from carbon monoxide and alcohol using metal carbonyl/alkoxide catalyst systems
- AN 1988:528300 CAPLUS
- DN 109:128300
- TI Selective homogeneous production of alkyl formate from carbon monoxide and alcohol using metal carbonyl/alkoxide catalyst systems
- AU Darensbourg, Donald J.; Gray, Robert L.; Ovalles, Cesar
- CS Dep. Chem., Texas A and M Univ., College Station, TX, 77843, USA
- SO Journal of Molecular Catalysis (1987), 41(3), 329-47 CODEN: JMCADS; ISSN: 0304-5102
- DT Journal
- LA English

- OS CASREACT 109:128300
- AB HCO2R (R = alkyl) production from ROH and CO catalyzed by homogeneous transition metal carbonyl complexes in the presence of alkali metal alkoxides is reported. A significant increase in the number of turnovers of this reaction by Group VI metal carbonyl/alkoxide catalysts over the alkali metal alkoxide-catalyzed process is due to the dual role of the metal carbonyl to provide a more electrophilic CO source and to promote the removal of trace H2O impurities via water-gas shift chemical The key intermediate in the proposed catalytic cycle is a short-lived metallo-ester derivative, which at >100° is protonated by ROH to give The reactivity of the metal carbonyl with alkali metal alkoxides is affected sharply by the solvent system used; e.g., THF is much more effective than ROH. Similarly, reaction of Ru3(CO)12 with ROH in the presence of alkoxides and CO also gave HCO2R. In addition, a convenient route to 13CO-enriched Ru3(CO)12 is achieved in the presence of trace amts. of alkoxides. In the absence of CO, XRu3(CO)10Y (X = H, OR; Y = OR) derivs. are produced by direct reaction of Ru3(CO)12 with ROH.
- L13 ANSWER 15 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Homogeneous catalysis of methyl formate production from carbon monoxide and methanol in the presence of metal carbonyl catalysts
- AN 1985:595807 CAPLUS
- DN 103:195807
- TI Homogeneous catalysis of methyl formate production from carbon monoxide and methanol in the presence of metal carbonyl catalysts
- AU Darensbourg, Donald J.; Gray, Robert L.; Ovalles, Cesar; Pala, Magdalena
- CS Dep. Chem., Texas A and M Univ., College Station, TX, 77843, USA
- SO Journal of Molecular Catalysis (1985), 29(2), 285-90 CODEN: JMCADS; ISSN: 0304-5102
- DT Journal
- LA English
- OS CASREACT 103:195807
- AB Homogeneous W and Ru carbonyl derivs., e.g., Et4N[HW2(CO)10], W(CO)6/KOMe, catalyzed the preparation of HCO2Me from CO and MeOH.
- L13 ANSWER 16 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI A convenient route to carbon-13-enriched triruthenium dodecacarbonyl. Chemistry relevant to methyl formate production from carbon monoxide and methanol
- AN 1985:6786 CAPLUS
- DN 102:6786
- TI A convenient route to carbon-13-enriched triruthenium dodecacarbonyl. Chemistry relevant to methyl formate production from carbon monoxide and methanol
- AU Darensbourg, Donald J.; Gray, Robert L.; Pala, Magdalena
- CS Dep. Chem., Texas A and M Univ., College Station, TX, 77843, USA
- SO Organometallics (1984), 3(12), 1928-30 CODEN: ORGND7; ISSN: 0276-7333
- DT Journal
- LA English
- OS CASREACT 102:6786
- The enhanced CO lability exhibited by Ru3(CO)12 in the presence of KOMe, where methoxycarbonyl adduct formation occurs, was used in the ready synthesis of highly 13C-enriched Ru3(CO)12. The methoxycarbonyl adduct is in equilibrium with Ru3(CO)12 in MeOH or MeOH-THF in the absence of added OMe-, indicative of substantial electrophilic character in the CO ligands of this trinuclear cluster. The possible role of this methoxycarbonyl adduct in the catalytic synthesis of HCO2Me from CO-MeOH is discussed.
- L13 ANSWER 17 OF 17 CAPLUS COPYRIGHT 2005 ACS on STN
- TI Methyl formate
- AN 1974:463162 CAPLUS
- DN 81:63162

TI Methyl formate

Wakamatsu, Hachiro; Shimomura, Koichi IN

PA Ajinomoto Co., Inc.

so U.S., 4 pp.

CODEN: USXXAM

DT Patent LAEnglish

FAN.CNT 1

|    | PATENT NO. | KIND | DATE     | APPLICATION NO. |   | DATE     |
|----|------------|------|----------|-----------------|---|----------|
|    |            |      |          |                 |   |          |
| ΡI | US 3816513 | Α    | 19740611 | US 1971-178933  |   | 19710909 |
|    |            |      |          | US 1971-178933  | Α | 19710909 |

Me formate was produced continuously by reaction of CO with MeOH over AΒ KOMe. Sufficient H was present to convert the excess CO to MeOH, which was recycled to the reactor.

=> logoff hold

| COST IN U.S. DOLLARS                       | SINCE FILE | TOTAL   |
|--|------------|---------|
|  | ENTRY      | SESSION |
| FULL ESTIMATED COST                        | 55.56      | 62.64   |
|  |            |         |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL   |
|  | ENTRY      | SESSION |
| CA SUBSCRIBER PRICE                        | -2.92      | -2.92   |

SESSION WILL BE HELD FOR 60 MINUTES STN INTERNATIONAL SESSION SUSPENDED AT 07:55:28 ON 06 MAY 2005

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID: SSSPTA1623PAZ

### PASSWORD:

\* \* \* \* \* \* RECONNECTED TO STN INTERNATIONAL \* \* \* \* \* SESSION RESUMED IN FILE 'CAPLUS' AT 08:05:39 ON 06 MAY 2005 FILE 'CAPLUS' ENTERED AT 08:05:39 ON 06 MAY 2005 COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

| COST IN U.S. DOLLARS FULL ESTIMATED COST   | SINCE FILE<br>ENTRY<br>55.56 | TOTAL<br>SESSION<br>62.64 |
|--|------------------------------|---------------------------|
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE<br>ENTRY          | TOTAL<br>SESSION          |
| CA SUBSCRIBER PRICE                        | -2.92                        | -2.92                     |
| => logoff hold<br>COST IN U.S. DOLLARS     | SINCE FILE<br>ENTRY          | TOTAL<br>SESSION          |
| FULL ESTIMATED COST                        | 55.56                        | 62.64                     |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE<br>ENTRY<br>-2.92 | TOTAL<br>SESSION          |
| CA SUBSCRIBER PRICE                        | -2.92                        | -2.92                     |

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```
Welcome to STN International! Enter x:x
LOGINID:SSSPTA1623PAZ
PASSWORD:
 * * * * * * RECONNECTED TO STN INTERNATIONAL * * * * *
SESSION RESUMED IN FILE 'CAPLUS' AT 08:30:59 ON 06 MAY 2005
FILE 'CAPLUS' ENTERED AT 08:30:59 ON 06 MAY 2005
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COST IN U.S. DOLLARS
                                                  SINCE FILE
                                                                  TOTAL
                                                       ENTRY
                                                                SESSION
FULL ESTIMATED COST
                                                       55.56
                                                                  62.64
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)
                                                  SINCE FILE
                                                                  TOTAL
                                                       ENTRY
                                                                SESSION
CA SUBSCRIBER PRICE
                                                       -2.92
                                                                  -2.92
=> d his
     (FILE 'HOME' ENTERED AT 07:31:53 ON 06 MAY 2005)
     FILE 'REGISTRY' ENTERED AT 07:32:08 ON 06 MAY 2005
                E METHYL FORMATE/CN
L1
              1 E3
     FILE 'CAPLUS' ENTERED AT 07:32:53 ON 06 MAY 2005
L2
            833 L1/PREP
L3
         140565 CARBON MONOXIDE
L4
          11230 METHOXIDE
L5
            248 L2 AND L3
L6
            248 L2 AND L5
L7
           1657 SUPERFICIAL VELOCITY
L8
              0 L6 AND L7
L9
              0 MTHANOL
L10
         178677 METHANOL
L11
            207 L5 AND L10
L12
            619 POTASSIUM METHOXIDE
L13
             17 L11 AND L12
=> 12 and 17
             0 L2 AND L7
L14
=> carbonylation
         10971 CARBONYLATION
           172 CARBONYLATIONS
L15
         11007 CARBONYLATION
                 (CARBONYLATION OR CARBONYLATIONS)
=> 17 and 115
             2 L7 AND L15
L16
=> d l16 1-2 ti
L16 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN
     Catalytic carbonylation method for the manufacture of acetic
     acid from methanol and carbon dioxide using a bubble-column reactor
L16 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN
TI
     Mathematical modeling of low-temperature liquid phase methanol synthesis
```

# process in a bubble slurry reactor

=> 13 and 14

L17 285 L3 AND L4

=> 17 and 117

L18 0 L7 AND L17

=> logoff hold

COST IN U.S. DOLLARS

SINCE FILE TOTAL
ENTRY SESSION
FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE TOTAL

CA SUBSCRIBER PRICE -2.92 -2.92

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STN INTERNATIONAL SESSION SUSPENDED AT 08:36:28 ON 06 MAY 2005